



# State of Utah

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DIVISION OF OIL, GAS AND MINING

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August 15, 1994

TO: Minerals File

FROM: Tony Gallegos, Reclamation Engineer *aa*

RE: Meeting Documentation, Moab Salt, Inc., Cane Creek Potash Mine, M/019/005, Grand County, Utah

Date: August 12, 1994  
Time: 1330 - 1545  
Location: DEQ offices, Salt Lake City  
Participants: Steve McNeal, Harry Campbell, Jerry Jackson, DWQ; Eric York Moab Salt, Inc.; Tony Gallegos, DOGM

Purpose of Meeting: To discuss finalization of the conceptual leak detection and control plan submitted by Moab Salt, Inc.

A brief discussion regarding the status of the conceptual plan was held at the beginning of the meeting. DOGM conditioned final approval of the Moab Salt, Inc. mining and reclamation plan on approval/finalization of the Conceptual Water Control Plan. That plan has not yet been finalized. DWQ is currently working on the Stormwater Permit application and attempting to resolve the leak detection issue. A copy of DOGM's August 27, 1993 site inspection memo was made for the DWQ files. Mr. Campbell is in the Stormwater Permit section of DWQ. Mr. Jackson is in the UIC section of DWQ.

Mr. York provided a general description of the leak detection testing and the current mode of harvesting and repairing the pond liners. Current Moab Salt practice is for the same workers harvesting the salts to perform the repair work on the liners. Liners are repaired on the basis of a visual inspection. There currently is no plan for routine inspection/replacement of the pond liners other than making repairs after harvesting. The old policy reprimanded workers damaging a liner and repairs were performed by a different group of workers. The old policy was counterproductive and resulted in damages to the liner being covered up and unreported.

Mr. York provided copies of a collection of Moab Salt memos describing a chronology of the testing of an electrical leak detection system for the ponds. The memos cover the time span of October 1990 to September 1991. The electrical leak detection system worked fine on a small scale test pond; however, it did not work on a larger pond. Mr. York theorized there were two main problems with the large scale application. One problem could be the existence of saturated soils/salts beneath the liners. This saturation does not allow for the isolation of the electrical current



to locate the leaks. The second problem could be that actual leaks in the liner exhibit a seeping flow instead of a gushing/streaming flow. The detection system will easily locate a stream of liquid, but will not readily locate a slow seeping and dispersed flow of liquid.

Mr. York described the current facilities in place to prevent migration of salts into the Colorado River. These facilities consist of a series of interceptor basins and a pump-back system. There is an "upper dam" which collects seepage and also acts as a reservoir for brine which is pumped back from other locations. This upper dam includes a spillway constructed to allow the dam to overflow instead of failing. The lower dam, the Mobley dam (sp?) is more aptly described as an earthen barrier with a culvert at surface elevation. A french drain made up of cobble is constructed beneath the lower dam. The french drain contains three subsurface pumps which collect brine seepage and pump it back to the upper dam. The intake of the pumps is at bedrock, approximately 30 feet below the surface elevation. DWQ and DOGM do not have any information or drawings depicting the location and function of this seepage collection system. There are also several sump systems located beneath the pond liners to alleviate the water pressure which has been found to build up from ground water sources.

Another issue discussed was a Stormwater Permit. Mr. York indicated their attorneys had filed a permit application quite some time ago. Mr. Campbell had not seen an application from Moab Salt. The permit may have been directed to another office or filed under Moab Salt's parent company, Texas Gulf. Both DWQ and Moab Salt agreed to track the submission and see what remains to be done in order to process the application. Moab Salt currently sells salt and potash as their products. Mr. Campbell indicated a "General Permit" may not be applicable for Moab Salt's operations because they are producing potash. It seems Moab Salt's method of salt production exempts them from the Stormwater Permit for salts; however, potash production requires more than just the general permit.

Mr. York asked for suggestions on other leak detection systems or technology which Moab Salt could use. One idea presented was infrared photography. This might work if the leaking areas had a different temperature than the ponds. The difference may be subtle and require comparison of time lapse photography. Another idea was to utilize the ground sonar methods being used to locate old underground workings. This technique might work if the density near the leak is different than the density of the other pond areas.

The meeting concluded with the understanding that DWQ and Moab Salt would look into the storm water permit application. Moab Salt would look into other possible leak detection methods. There was a suggestion that Moab Salt provide DWQ and DOGM with drawings/schematics describing the salt migration prevention system currently in place.

jb  
cc: Eric York, Moab Salt, Inc.  
Steve McNeal, DWQ  
Wayne Hedberg, DOGM (route)  
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